

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (Previously Presented): A method of manufacturing a piezoelectric element, comprising the steps of:

applying a masking agent to a surface of a piezoelectric material to form a film of the masking agent on the surface of the piezoelectric material;

patterning the film of the masking agent into a predetermined masking pattern;

selectively applying an oil repellent to surface portions of the substrate which are not covered with the patterned film;

holding the patterned film in contact with a vapor of a solvent for the masking agent, diluted with an inert gas, so as to fluidize the film to a domed shape on the surface of the piezoelectric material, wherein the vapor diluted with the inert gas is formed by bubbling the solvent with the inert gas;

curing the dome-shaped film; and

dry etching the piezoelectric material together with the cured film, so as to process the piezoelectric material into a three-dimensional convex profile corresponding to thickness distribution of the domed shape.

Claim 2 (Cancelled).

Claim 3 (Previously Presented): A method of manufacturing a piezoelectric element, comprising:

applying a masking agent to a surface of a substrate made of a piezoelectric material to form a film of the masking agent on the surface of the substrate;

patterning the film of the masking agent into a predetermined masking pattern;

selectively applying an oil repellent to surface portions of the substrate which are

not covered with the patterned film;

contacting the patterned film with a vapor of a solvent for the masking agent, diluted with an inert gas, to fluidize the patterned film into a dome shape, wherein the vapor diluted with the inert gas is formed by bubbling the solvent with the inert gas;

curing the dome-shaped film; and

dry etching the surface of the substrate together with the cured film to process the substrate into a three-dimensional convex structure of a profile corresponding to a thickness distribution of the domed shape.

Claim 4 (Previously Presented): The method of Claim 3, wherein the dome-shaped film is cured by UV irradiation.

Claims 5-6 (Cancelled).

Claim 7 (Previously Presented): The method of Claim 3, wherein the dry etching is conducted by using a perfluorocarbon, SF₆, chlorine or iodine gas.

Claim 8 (New): The method according to claim 1, wherein the oil repellent comprises hexamethyldisilazane.

Claim 9 (New): The method according to claim 3, wherein the oil repellent comprises hexamethyldisilazane.